

Notice of Allowability

Application No.

10/678,831

Examiner

Nitin Patel

Applicant(s)

STARRETT, CORTLAND D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/3/2003.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

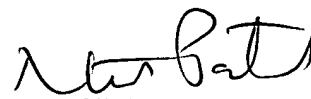
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 10/03/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


NITIN I. PATEL
PRIMARY EXAMINER

REASON FOR ALLOWANCE

1. Claims 1-21 is allowed.
2. The prior art fails to teach or suggest a method for deterministically matching first elements of a first set of objects or events with second elements of a second set of objects or events, matching first and second elements each being associated with common values of an identification code pn having $\text{.vertline.pn.vertline.}$ characters, and where the identification code can be insufficient to uniquely identify the first elements, and portions of the identification code values associated with the first and second elements can be unknown; comprising the steps of: a) generating a mapping .theta. for the first set such that, for each element $l.\text{sub.i}$ of the first set $\text{.theta.}(l.\text{sub.i})$ equals $\langle k.\text{sub.i}, \text{ppn.sub.i} \rangle$, where pn.sub.i is at least a portion of the identification code value associated with the element $l.\text{sub.i}$ and ppn.sub.i is defined as the first $k.\text{sub.i}$ characters of pn.sub.i , and $k.\text{sub.i}$ is selected to be the minimum number of characters required to uniquely identify $l.\text{sub.i}$ in the first set, whereby values for $k.\text{sub.i}$ greater than $\text{.vertline.pn.vertline.}$ imply that the element $l.\text{sub.i}$ is not uniquely identified by the portion ppn.sub.i ; b) determining pn.sub.j for an element $e.\text{sub.j}$ in the second set, where pn.sub.j is at least a portion of the identification code value associated with the element $e.\text{sub.j}$; and c) matching the element $e.\text{sub.j}$ and the element $l.\text{sub.i}$ only if the first $k.\text{sub.i}$ characters of pn.sub.j equal ppn.sub.i and not matching the element $e.\text{sub.j}$ and the element $l.\text{sub.i}$ if the element $l.\text{sub.i}$ is not uniquely identified in the first set by the portion pn.sub.i as claimed in claim 1.

The prior art fails to teach or suggest a method for deterministically matching letters in a first set with events in a second set, matching letters and events each being associated with common values of an identification code $\langle pn, pc \rangle$, where pn is a postal delivery code including at most $\text{.vertline.pn.vertline.}$ characters and pc is a tracking code, and where the code pc is constant for all the letters and the identification code can be insufficient to uniquely identify the letters, and portions of the delivery code pn associated with the letters and the events can be unknown; comprising the steps of: a) generating a mapping .theta. for the first set such that, for each letter $l.\text{sub.i}$ in the first set $\text{.theta.}(l.\text{sub.i})$ equals $\langle k.\text{sub.i}, ppn.\text{sub.i} \rangle$, where $pn.\text{sub.i}$ is at least a portion of pn in the identification code value $\langle pn, pc \rangle$ associated with the letter $l.\text{sub.i}$, and $ppn.\text{sub.i}$ is defined as the first $k.\text{sub.i}$ characters of $pn.\text{sub.i}$, and $k.\text{sub.i}$ is selected to be the minimum number of characters required to uniquely identify the letter $l.\text{sub.i}$ in the first set, whereby values for $k.\text{sub.i}$ greater than $\text{.vertline.pn.vertline.}$ imply that the letter $l.\text{sub.i}$ is not uniquely identified by the portion $ppn.\text{sub.i}$; b) determining $pn.\text{sub.j}$ for an event $e.\text{sub.j}$ in the second set, where $pn.\text{sub.j}$ is at least a predetermined portion of pn in the identification code value $\langle pn, pc \rangle$ associated with the event $e.\text{sub.j}$; and c) matching the event $e.\text{sub.j}$ and the letter $l.\text{sub.i}$ only if the first $k.\text{sub.i}$ characters of $pn.\text{sub.j}$ equal $ppn.\text{sub.i}$ and not matching the event $e.\text{sub.i}$ and the letter $l.\text{sub.i}$ if the letter $l.\text{sub.i}$ is not uniquely identified in the first set by the portion $pn.\text{sub.i}$ as claimed in claim 4.

The prior art fails to teach or suggest a method for deterministically matching first elements of a first set of objects or events with second elements of a second set of

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objects or events, matching first and second elements each being associated with common values of an identification code pn having $\text{.vertline.pn.vertline.}$ characters, and where the identification code can be insufficient to uniquely identify the first elements, and portions of the identification code values associated with the first and second elements can be unknown; comprising the steps of: a) generating a minimal k -unique mapping for the first set such that, for each element $l.\text{sub.i}$ of the first set such that $l.\text{sub.i}$ maps to a pair $\langle k.\text{sub.i}, ppn.\text{sub.i} \rangle$, where $pn.\text{sub.i}$ is at least a portion of the identification code value pn associated with the first elements and $ppn.\text{sub.i}$ is defined as the first $k.\text{sub.i}$ characters of $pn.\text{sub.i}$, b) determining $pn.\text{sub.j}$ for an element $e.\text{sub.j}$ in the second set, where $pn.\text{sub.j}$ is at least a portion of the identification code value associated with the element $e.\text{sub.j}$; and c) matching the element $e.\text{sub.j}$ and the element $l.\text{sub.i}$ only if the first $k.\text{sub.i}$ characters of $pn.\text{sub.j}$ equal $ppn.\text{sub.i}$ and not matching the element $e.\text{sub.j}$ and the element $l.\text{sub.i}$ if the element $l.\text{sub.i}$ is not uniquely identified in the first set as claimed in claim 8.

The prior art fails to teach or suggest a data processing system for deterministically matching first elements of a first set of objects or events with second elements of a second set of objects or events, matching first and second elements each being associated with common values of an identification code pn having $\text{.vertline.pn.vertline.}$ characters, and where the identification code can be insufficient to uniquely identify the first elements, and portions of the identification code values associated with the first and second elements can be unknown; the data processing system being programmed to: a) generate a mapping .theta. for the first set such that,

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for each element $l_{sub.i}$ of the first set $\theta(l_{sub.i})$ equals $\langle k_{sub.i}, ppn_{sub.i} \rangle$, where $pn_{sub.i}$ is at least a portion of the identification code value associated with the element $l_{sub.i}$ and $ppn_{sub.i}$ is defined as the first $k_{sub.i}$ characters of $pn_{sub.i}$, and $k_{sub.i}$ is selected to be the minimum number of characters required to uniquely identify $l_{sub.i}$ in the first set, whereby values for $k_{sub.i}$ greater than $|\theta|$ imply that the element $l_{sub.i}$ is not uniquely identified by the portion $ppn_{sub.i}$; b) input $pn_{sub.j}$ for an element $e_{sub.j}$ in the second set, where $pn_{sub.j}$ is at least a portion of the identification code value associated with the element $e_{sub.j}$; and c) match the element $e_{sub.j}$ and the element $l_{sub.i}$ only if the first $k_{sub.i}$ characters of $pn_{sub.j}$ equal $ppn_{sub.i}$ and not match the element $e_{sub.j}$ and the element $l_{sub.i}$ if the element $l_{sub.i}$ is not uniquely identified in the first set by the portion $pn_{sub.i}$ as claimed in claim 10.

The prior art fails to teach or suggest a data processing system for deterministically matching letters in a first set with events in a second set, matching letters and events each being associated with common values of an identification code $\langle pn, pc \rangle$, where pn is a postal delivery code including at most $|\theta|$ characters and pc is a tracking code, and where the code pc is constant for all the letters and the identification code can be insufficient to uniquely identify the letters, and portions of the delivery code pn associated with the letters and the events can be unknown; the data processing being programmed to: a) generate a mapping θ for the first set such that, for each letter $l_{sub.i}$ in the first set $\theta(l_{sub.i})$ equals $\langle k_{sub.i}, ppn_{sub.i} \rangle$, where $pn_{sub.i}$ is at least a portion of pn in the identification code value $\langle pn, pc \rangle$ associated with the letter $l_{sub.i}$, and $ppn_{sub.i}$ is defined as the first $k_{sub.i}$

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characters of $pn.sub.i$, and $k.sub.i$ is selected to be the minimum number of characters required to uniquely identify the letter $l.sub.i$ in the first set, whereby values for $k.sub.i$ greater than $.vertline.pn.vertline.$ imply that the letter $l.sub.i$ is not uniquely identified by the portion $ppn.sub.i$; b) input $pn.sub.j$ for an event $e.sub.j$ in the second set, where $pn.sub.j$ is at least a predetermined portion of pn in the identification code value $\langle pn, pc \rangle$ associated with the event $e.sub.j$; and c) match the event $e.sub.j$ and the letter $l.sub.i$ only if the first $k.sub.i$ characters of $pn.sub.j$ equal $ppn.sub.i$ and not match the event $e.sub.i$ and the letter $l.sub.i$ if the letter $l.sub.i$ is not uniquely identified in the first set by the portion $pn.sub.i$ as claimed in claim 12.

The prior art fails to teach or suggest a data processing system for deterministically matching first elements of a first set of objects or events with second elements of a second set of objects or events, matching first and second elements each being associated with common values of an identification code pn having $.vertline.pn.vertline.$ characters, and where the identification code can be insufficient to uniquely identify the first elements, and portions of the identification code values associated with the first and second elements can be unknown; the data processing system being programmed to: a) generate a minimal k -unique mapping for the first set such that, for each element $l.sub.i$ of the first set such that $l.sub.i$ maps to a pair $\langle k.sub.i, ppn.sub.i \rangle$, where $pn.sub.i$ is at least a portion of the identification code value pn associated with the first elements and $ppn.sub.i$ is defined as the first $k.sub.i$ characters of $pn.sub.i$, b) input $pn.sub.j$ for an element $e.sub.j$ in the second set, where $pn.sub.j$ is at least a portion of the identification code value associated with the element

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e.sub.j; and c) match the element e.sub.j and the element l.sub.i only if the first k.sub.i characters of pn.sub.j equal ppn.sub.i and not match the element e.sub.j and the element l.sub.i if the element l.sub.i is not uniquely identified in the first set as claimed in claim 16.

The prior art fails to teach or suggest a computer readable medium for providing program code for execution by a programmable data processor, the processor being responsive to the program code to: a) generate a mapping .theta. for a first set such that, for each element l.sub.i of the first set .theta.(l.sub.i) equals <k.sub.i, ppn.sub.i>, where pn.sub.i is at least a portion of an identification code value associated with the element l.sub.i and ppn.sub.i is defined as the first k.sub.i characters of pn.sub.i, and k.sub.i is selected to be the minimum number of characters required to uniquely identify l.sub.i in the first set; b) input pn.sub.j for an element e.sub.j in a second set, where pn.sub.j is at least a portion of the identification code value associated with the element e.sub.j; and c) match the element e.sub.j and the element l.sub.i only if the first k.sub.i characters of pn.sub.j equal ppn.sub.i and not match the element e.sub.j and the element l.sub.i if the element l.sub.i is not uniquely identified in the first set by the portion pn.sub.i as claimed in claim 17.

The prior art fails to teach or suggest a computer readable medium for providing program code for execution by a programmable data processor, the processor being responsive to the program code to: a) generate a mapping .theta. for the a set of letters l such that, for each letter l.sub.i in the first set .theta.(l.sub.i) equals <k.sub.i, ppn.sub.i>, where pn.sub.i is at least a portion of pn in an identification code value <pn,

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pc> associated with the letter l.sub.i, and ppn.sub.i is defined as the first k.sub.i characters of pn.sub.i, and k.sub.i is selected to be the minimum number of characters required to uniquely identify the letter l.sub.i in the first set; b) input pn.sub.j for an event e.sub.j in a second set, where pn.sub.j is at least a predetermined portion of pn in the identification code value <pn, pc> associated with the event e.sub.j; and c) match the event e.sub.j and the letter l.sub.i only if the first k.sub.i characters of pn.sub.j equal ppn.sub.i and not match the event e.sub.i and the letter l.sub.i if the letter l.sub.i is not uniquely identified in the first set by the portion pn.sub.i as claimed in claim 18.

The prior art fails to teach or suggest a system for matching letters with events occurring during delivery of the letters, the system comprising: a) a scanner for scanning code <pn, pc>, where pn is a postal delivery code including at most .vertline.pn.vertline. characters and pc is a tracking code, printed on the letters during occurrence of one of the events; b) a data processing system communicating with the scanner to input the code <pn, pc> and for deterministically matching letters in a first set with events in a second set, matching letters and events each being associated with common values of the identification code <pn, pc> as claimed in claim 19.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

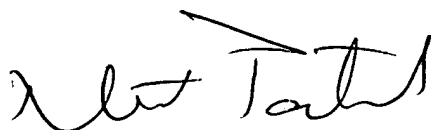
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin Patel whose telephone number is 571-272-7677.

The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin H. Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nitin Patel
Primary Examiner
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A handwritten signature in black ink, appearing to read 'Nitin Patel', with a stylized flourish at the end.

NITIN I. PATEL
PRIMARY EXAMINER